

Respirators-N95

COVID-19

The Department of Safety and Professional Services
March 27, 2020

Objectives

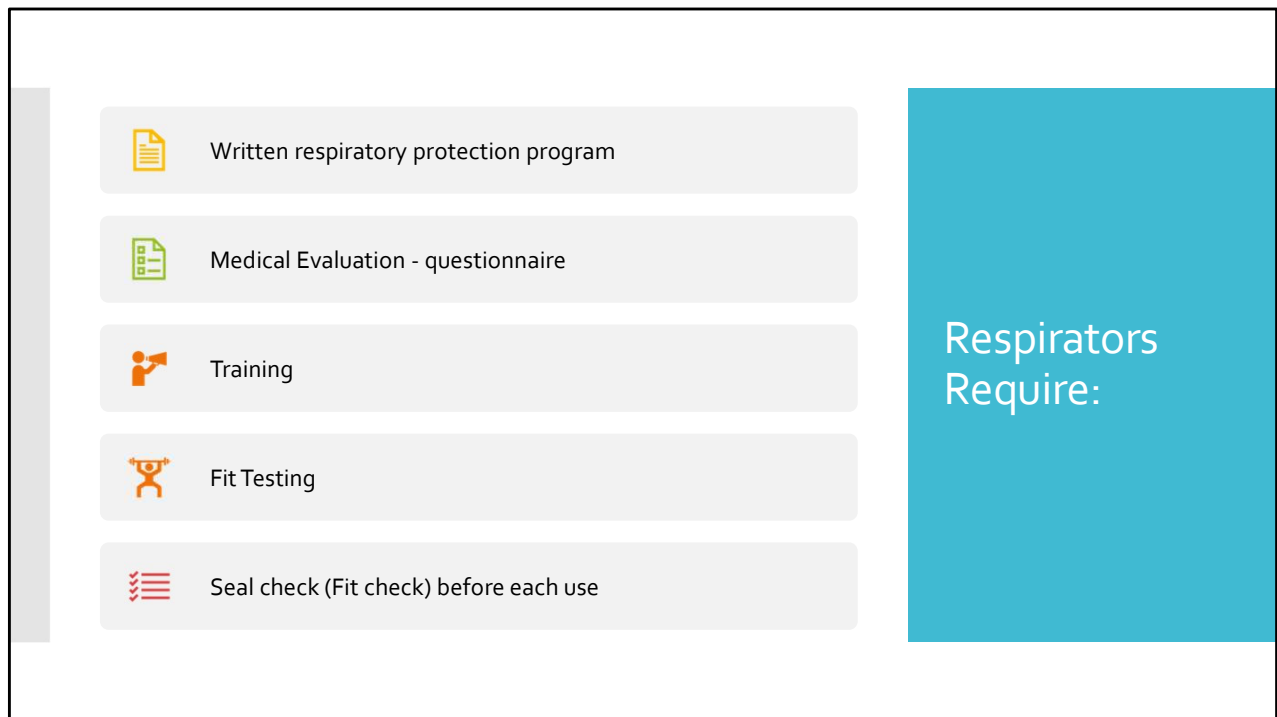


Train the Trainer –use the Notes view
to see the included commentary



Provide information on N95 or
similar type respirators

This training was developed to provide basic information and resources for N95 or similar respirators.



The DSPS website has resources, under the program area “Public Sector Employee Safety”, under publications. The two OSHA video links on the Resource page should be used to supplement this training.

Respiratory Protection Program Template:

<https://dsps.wi.gov/Documents/Programs/PublicSafety/TemplateRespiratoryProtection.pdf>

Respiratory Protection Checklist

<https://dsps.wi.gov/Documents/Programs/PublicSafety/RespiratoryProtectionChecklists.pdf>

Written Program

- Include selection, medical fitness, maintenance, training, fit testing, use, program evaluation, etc.
- Why? To ensure the respirator wearer is safely using the proper respirator and has a written resource for reference.
- The program evaluation facet allows for continuous improvements or changes to be made, as necessary, to maintain a protective program.
- [Template Written Respiratory Protection Program](#) provides a basic template that needs to be modified to reflect your program/practices

The written program should be reviewed annually and updated to reflect any changes that have occurred, e.g. different brand of respirators or a different medical provider.

There are many templates available from other sources, so use one that best fits your workplace.

Recordkeeping



Retains records of medical evaluations



Retains fit testing records



Retains a copy of the current respiratory protection program



Provides access to the above records by affected employees and government agencies

Medical Evaluation- Questionnaire

- Employees need to be medically cleared to wear respirators prior to use
- Respirators restrict breathing which can put a strain on your heart or lungs and can also cause claustrophobia for some people
- A physician or other licensed health care professional operating within the scope of his/her practice needs to medically evaluate employees to determine under what conditions they can safely wear respirators.
- Employees are required to complete OSHA's [Respirator Medical Evaluation Questionnaire](#) found in Appendix C of 29 CFR 1910.134

The questionnaire is confidential, and the employee will provide the questionnaire directly to the Healthcare provider. The employer will receive a statement from the Healthcare provider that the employee is able, can only wear a specific type of respirator or is unable to wear respiratory protection. Details of the questionnaire are not shared with the employer.

Training

- Why the respirator is necessary
 - Consequences of improper fit, use or maintenance
 - Limitations and capabilities of the respirator
 - How to inspect, put on, remove, use and check the seals of the respirator
 - Maintenance and storage procedures
 - General requirements of the Respiratory Protection standard
 - Medical signs and symptoms that may limit or prevent effective use of the respirator
 - Workplace specific training
 - Training prior to employee use of a respirator
- Retraining as specified below:**
- Annually
 - Upon changes in workplace conditions that affect respirator use
 - When knowledge and skills for respirator use are not retained by the employee
 - Whenever retraining appears necessary to ensure safe respirator use



[OSHA "Respiratory Protection in General Industry"](#), 10-minute video that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees

Frequently the terms “don” and “doff” are used in respirator training. Don is to put on and doff is to take off.

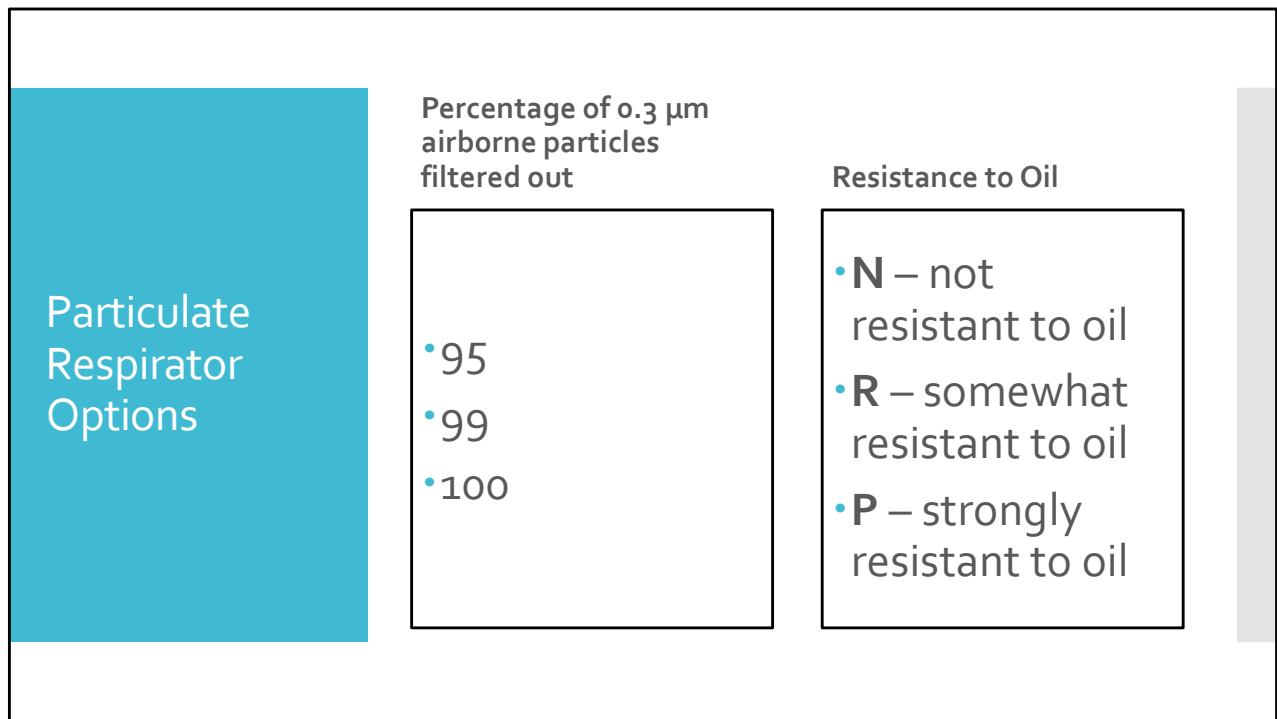
Respiratory Protection

- Protects against inhalation of harmful materials
 - Protection is based on the type of respirator selected and the type of cartridges/filters if applicable
 - Protection is also based on the respirator being worn as instructed by the manufacturer
 - Initial fit testing to ensure ability to obtain a face “seal”
 - User seal check (fit check) every time before use to ensure a face seal
- Tight fitting respirators require the user to be clean shaven for the area where the respirator forms a seal; facial hair and hair styles must not interfere with the respirator sealing area and/or inhalation or exhalation valves if applicable

Respirator manufacturers are required to provide wear and care instructions for the respirator. Read and follow the manufacturer’s instructions.

<h1>Respirator vs. Mask</h1>	 <p>N95 Respirator</p>	<p>Respirator - N95</p> <ul style="list-style-type: none"> • Evaluated, tested and approved by NIOSH • Reduces wearer's exposure to particles including small particle aerosols and large droplets • Tight fitting face seal • Fit testing required • User seal check required each time respirator is put on • Filters out at least 95% of airborne particles including large and small particles • When properly fitted and worn, minimal leakage occurs around respirator edges when user inhales • Single use, or replacement if damaged, deformed or soiled 	 <p>Surgical Mask</p>	<p>Mask</p> <ul style="list-style-type: none"> • Cleared by the U.S. Food and Drug Administration • Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions. • Loose-fitting • No fit test required • No user seal check required • Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection • Leakage occurs around the edge of the mask when the user inhales • Disposable

N95 and similar respirators are sometimes referred to as filtering facepiece respirators since the entire facepiece of the respirator is made of filtering material

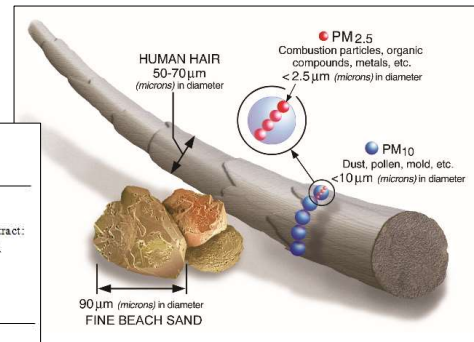
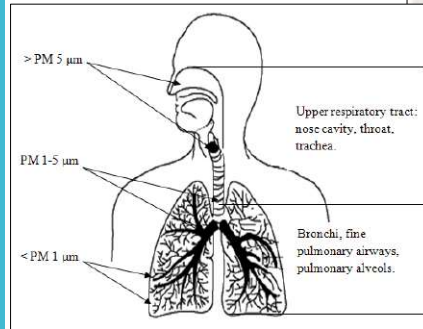


What does N95 or P100 mean? The respirators look similar?

A N95 is not resistant to oil and must capture 95% of the 0.3 μm (0.000012-inch) particles in the air passing thru the respirator.

A P100 respirator is resistant to oil and must filter out 99.97% of particles 0.3 μm or larger in size

0.3 μm ??

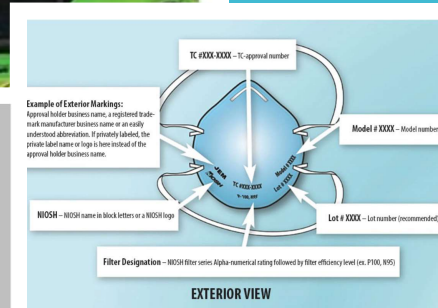


Particles ranging from 0.3 to 0.9 micron present the greatest health concern because they are small enough to get past the tiny hairs that line our breathing passages and are too large to be easily exhaled.

Particles that size are about 300 times smaller than the diameter of a human hair, and 25 to 50 times smaller than we can see.


Respirators:

- Must be NIOSH certified,
 - Due to shortages, some alternative certifications are being referenced by NIOSH
- Beware of fraudulent respirators




Not all respirators are the same. Especially now, “knock-off” respirators may enter the market. The CDC has a list of approved respirators and several respirator manufacturers also have web pages where you can verify the product.

https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/



Key Points About Respirators

- Put on before potential incident
 - Must be clean shaven, nothing to interfere with the seal
 - Remove and discard carefully, contaminated PPE is a source of exposure to you
 - Immediately wash your hands and/or body parts as applicable to your situation
- 

Kindly and effectively provide feedback to your co-workers if you notice that they are not properly wearing their PPE.

Key Points, cont.

- Use the same model/size respirator that you have been fit tested for
- Follow Manufacturer's instructions for putting on
- Perform a user seal check (fit check) EVERY TIME you put on the respirator
 - The respirator manufacturer's instructions will tell you how to perform this check

Links to respirator training video's, a sample written program and checklists are provided on the "Resources" slide at the end of this presentation.

Fitting Instructions: Must be followed each time respirator is worn.



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.
2. Position the respirator under your chin with the nosepiece up. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears. Make certain hair, facial hair, jewelry and clothing are not between your face and the respirator as they will interfere with fit.
3. Place your fingertips from both hands at the top of the metal nosepiece. Using two hands, mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece.
⚠ Pinching the nosepiece using one hand may result in improper fit and less effective respirator performance (Use two hands).
4. Perform a User Seal Check. To check the respirator-to-face seal, place both hands completely over the respirator and exhale. Be careful not to disturb the position of the respirator. If air leaks around nose, readjust the nosepiece as described in step 3. If air leaks around the respirator edges, adjust position of straps and make certain respirator edges fit snugly against the face. **If you CANNOT achieve a proper seal, DO NOT enter the contaminated area. See your supervisor.**

3M

Health Care Particulate Respirator and Surgical Mask 1860/1860S

User Instructions

IMPORTANT: Keep these *User Instructions* for reference.

⚠ WARNING

This respirator helps protect against certain particulate contaminants but does not eliminate exposure to or the risk of contracting any disease or infection. **Misuse may result in sickness or death.** For proper use, see supervisor, or *User Instructions*, or call 3M Health Care Helpline at 1-800-228-3957. In Canada, call 3M Helpline at 1-800-563-2921.

These instructions are specific to a 3M 1860/1860S respirator.

Respirator Fit Test vs. User Seal Check

Fit Testing Is Performed:

- After medical clearance and training
- Before respirator is used in the field
- Annually
- Whenever:
 - Weight gain/loss
 - Facial scarring
 - Dental changes
 - Cosmetic surgery

[OSHA Respiratory Fit Testing](#), 12-minute video on fit testing that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees


User Seal Check (Fit Check) Is Performed By The User

- Every time respirator is worn
 - The respirator manufacturer's instructions will tell you how to perform this check

A fit test determines your ability to achieve an adequate seal with that specific brand/model/size of respirator. If you are unable to pass a fit test, you may need a different size, model or style of respirator.

A user seal check makes sure that you have properly put on the respirator and have achieved an adequate seal for this instance. If the seal is broken or the respirator is damaged, you must leave the area and remove your respirator safely.

A proper seal is important, imagine snorkeling with a facemask and/or breathing tube that leaks.

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- OSHA Protocols must be used, [§1910.134 Appendix A](#)
 - Qualitative and Quantitative methods

Fit Testing

Qualitative uses a test agent for a yes/no result

Quantitative uses a machine to provide a numeric fit factor

Examples of Qualitative Fit Testing Products

- [3M Quick Reference Guide: Qualitative Fit Testing](#), if you are using another brand of a fit testing kit, you must refer to that manufacturer's fit testing kit instructions
- [Moldex Qualitative Fit Test Kit](#)

These are only two product examples; your respirator manufacturer may be able to provide you with additional fit testing resources.



Removing Your Personal Protective Equipment (PPE)

If you are wearing a respirator, you are more than likely wearing other Personal Protective Equipment (PPE).

Contaminated and Clean Areas of PPE

Contaminated – Outside Front

- Areas of PPE that have or are likely to have been in contact with body sites, materials or environmental surfaces where the infectious organism may reside

Clean - Inside

- Areas of PPE that are not likely to have been in contact with the harmful agent

It is safest to treat all your used PPE as if it were contaminated.

Example Order of Removing PPE

1. Coveralls
2. Gloves
Wash Hands
3. Face Shield/Eye Protection
4. Respirator
Wash Hands

The order is important to reduce potential contamination. The removal order may be different depending on the type of PPE you are wearing or the hazard you are protecting against.



Outside of area



Ensure that hand washing facilities are available at point of removal

If you are wearing your PPE in the field, bring a bag with you to place your used PPE into for later proper disposal

Frequent hand washing and/or use of hand sanitizer can result in dry or cracked hands. Make sure to use hand lotion based on your skin needs to avoid dry or cracked hands. Many people find that limited ingredient and non scented products work best for them.

If Hand Washing Facilities Are Not Available

- If soap and water are not readily available and illicit drugs or other chemical substances are NOT suspected to be present, use an alcohol-based hand sanitizer with at least 60% alcohol

The use of hand sanitizer can result in chemicals being absorbed into your skin at a greater quantity or rate, so understand your current surroundings.

Removing Respirator

- DO NOT TOUCH the front of the respirator – it may be contaminated



The nature of filtering face pieces, i.e. the “cloth” type material, means that they can NOT be decontaminated by wiping or spraying.

The filtering media is considered porous and a disinfecting solution is not able to reach all the surface areas unless the material is soaked entirely as in laundering, which is not feasible for this type of respirator. Also, the filtering material of some respirators is electrostatically treated and using water or chemicals may destroy this property.

Removing Respirator, cont.

- Without touching the respirator - Remove by pulling the bottom strap over the back of your head, followed by the top strap
- Discard respirator
- **WASH YOUR HANDS**



These are general removal instructions; your respirator manufacturer is required to provide specific instructions for their product. You must follow the respirator manufacturer's instructions.

Removal Instructions:



1. Without touching the respirator, *slowly* lift the bottom strap from around your neck up and over your head. Then lift off the top strap. Store or discard according to your facility's infection control policy. Dispose of used product in accordance with applicable regulations.

Storage Conditions and Shelf Life:

Before use, store respirators in the original packaging, away from contaminated areas, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals. When stored in original packaging between temperatures from -4°F (-20°C) to +86°F (+30°C) and not exceeding 80% RH, the product may be used until the date specified on packaging located next to the "Use by Date" symbol.

You must also follow the storage and maintenance instructions. A damaged respirator will not provide protection.

Hand Hygiene

- Perform hand hygiene immediately after removing PPE
 - If hands become visibly contaminated during PPE removal, wash hands before continuing to remove PPE
- You keep on hearing about hand hygiene because it's such an important step

As previously mentioned, frequent hand washing and/or use of hand sanitizer can result in dry or cracked hands. Use hand lotion to avoid dry or cracked hands which can be an entry point for chemical or biological hazards. Many people find that limited ingredient and non scented products work best for them.

Resources

- [CDC/NIOSH - Understanding the Difference Between Surgical Masks and N95 Respirators](#)
- [CDC/NIOSH - Required Labeling of NIOSH-Approved N95 Filtering Facepiece Respirators](#)
- [Respiratory Protection Checklists](#), provides checklists for the different aspects of a respiratory protection program
- [OSHA "Respiratory Protection in General Industry"](#), 10-minute video that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees
- [OSHA Respiratory Fit Testing](#), 12-minute video on fit testing that can be used to provide basic respiratory protection training – workplace specific training must also be provided to employees
- [OSHA's Respiratory Protection Safety and Health Topics](#) web page has additional training videos and general guidance on respiratory protection

The listed resources are from recognized sources. Be cautious of resources that you use, there is a lot of misinformation out there.

Questions?

DSPSSBHealthandSafetyTech@wi.gov

Or contact your District Occupational Safety and Health Inspector:

[Public Sector District Safety Inspectors](#)

